

IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended) A digital signal transmission system using a digital modulation system comprising a digital signal transmitter having a first digital signal processing unit producing a digital signal which includes a plurality of signal units, each having a guard interval to reduce multi-path effect and a digital signal receiver receiving a digital signal from said digital signal transmitter,

wherein said digital signal receiver comprising:

a second digital signal processing unit for processing said digital signal from said digital signal transmitter and outputting a digital demodulated signal and a correlation value signal from said digital demodulated signal;

a signal converter₁ coupled with said second digital signal processing unit and supplied said correlation value signal therefrom, for generating ~~a waveform indicating a transmission condition including~~ at least a main wave signal level and a ghost imaging signal level in response corresponding to said correlation value signal; and

a display₁ coupled with said signal converter, for displaying ~~said a waveform corresponding to said main wave signal level and said ghost imaging signal level in each horizontal scanning period of said display indicating to indicate~~ a transmission condition in said digital transmission system.

2. (currently amended)A digital signal transmission system according to claim 1, wherein ~~said signal converter generates a~~said waveform indicating said indicates a main wave and a reflected wave relating to said digital signal transmittedcorresponding to said main wave signal level and said ghost imaging signal level, respectively.

3. (currently amended)A digital signal transmission system according to claim 1, wherein said ~~second digital signal processing unit~~signal converter further generates a BER signal indicative of the bit error rate of said digital signal received and a field intensity signal indicative of the field intensity of said digital signal received, and said display ~~further simultaneously~~ displays said BER signal and said field intensity signal in association with said main wave and a reflected wave.

4. (currently amended)A digital signal transmission system according to claim 12, wherein ~~said digital modulation system is a multi-carrier modulation system,~~said signal converter further generates a guard interval signal corresponding to a period of said guard interval of said digital signal received, and said display further displays a guard-interval based on said guard interval signal in association with said ~~waveform~~main wave and said reflected wave.

5. (currently amended)A digital signal transmission system according to claim 12, wherein said signal converter further generates a time scale signal and

said display further displays a time scale based on said time scale signal in association with said ~~waveform~~ main wave and said reflected wave.

6. (currently amended) A digital signal transmission system according to claim 3, wherein said digital modulation system is a multi-carrier modulation system, said signal converter further generates a guard interval signal, and said display further displays the guard interval based on said guard interval signal ~~in relation to the main wave of said waveform~~ in association with said main wave and said reflected wave.

7. (currently amended) A digital signal transmission system according to claim 3~~2~~, wherein said signal converter further includes an abnormality detecting unit for detecting an abnormality of said digital signal from said correlation value signal and outputting a signal indicative of said abnormality.

8. (currently amended) A digital signal transmission system according to claim 7, wherein said signal converter further includes a memory unit, in which the signal indicative of said abnormality is stored and said display indicates simultaneously the signal indicative of ~~said waveform with~~ said abnormality and a ~~current waveform with no abnormality indicating said transmission conditions~~ said main wave and said reflected wave.

9. (original) A digital signal transmission system according to claim 4, wherein said guard interval is so designed to be variable in a time period.

10. (currently amended) A digital signal receiver, to which a digital signal from a digital signal transmitter using a digital modulation system is supplied, said digital signal includes a plurality of signal units, each having a guard interval to reduce multi-path effect comprising;

a second digital signal processing unit for processing said digital signal and outputting a digital demodulated signal and a correlation value signal from said digital demodulated signal;

a signal converter₁ coupled with said second digital signal processing unit and supplied said correlation value signal therefrom, for generating ~~a waveform indicating a transmission condition including~~ at least a main wave signal level and a ghost imaging signal level and a reflected wave in response corresponding to said correlation value signal; and

a display₁ coupled with said signal converter, for displaying ~~said a waveform corresponding to said main wave signal level and said ghost imaging signal level in each horizontal scanning period of said display indicating to indicate~~ a transmission condition of said digital signal.

11. (currently amended) A digital signal receiver according to claim 10, wherein said ~~second digital signal processing unit~~ signal converter further generates a BER signal indicative of the bit error rate of said digital signal received and a field

intensity signal indicative of the field intensity of said digital signal received, and said display ~~further simultaneously displays~~ said BER signal, ~~and said field intensity signal in association with said main wave and a reflected wave.~~

12. (currently amended)A digital signal receiver according to claim 10, wherein ~~said digital modulation system is a multi-carrier modulation system~~, said signal converter further generates a guard interval signal and a time scale signal, and said display further displays a guard-interval based on said guard interval signal corresponding to a period of said guard interval of said digital signal received, ~~and a time scale based on said time scale signal in association with said waveform~~main wave and said reflected wave.

13. (currently amended)A digital signal receiver according to claim ~~4~~10, wherein ~~said digital modulation system is a multi-carrier modulation system~~, said signal converter further generates ~~a guard interval signal and a time scale signal~~, and said display further displays ~~a guard interval based on said guard interval signal and a time scale based on said time scale signal in association with said waveform~~main wave and said reflected wave.

14. (currently amended)A digital signal receiver according to claim ~~4~~10, wherein said signal converter further includes an abnormality detecting unit for detecting an abnormality of said digital signal from said correlation value signal and outputting a signal indicative of said abnormality.

15. (currently amended) A digital signal receiver according to claim 14, wherein said signal converter further includes a memory unit, in which the signal indicative of said abnormality is stored and said display indicates simultaneously the signal indicative of said waveform with said abnormality and a current waveform with no abnormality indicating said transmission conditions said main wave and said reflected wave.

16. (currently amended) A digital signal receiver according to claim ~~13~~ 12, wherein said guard interval is so designed to be variable in a time period.

17. (currently amended) A method of displaying a digital signal transmission condition in a digital signal receiver, to which a digital signal from a digital signal transmitter using a digital modulation system is supplied, said digital signal includes a plurality of signal units, each having a guard interval to reduce the multi-path effect comprising the steps of;

processing said digital signal in a second digital signal processing unit of said digital signal receiver;

outputting a digital demodulated signal and a correlation value signal from ~~said second digital signal processing unit~~ said digital demodulated signal;

generating, in a signal converter coupled with said second digital signal processing unit, a waveform at least a main wave signal level and a ghost imaging

signal level indicating a transmission condition including a main wave in response~~corresponding~~ to said correlation value signal; and

displaying said waveform indicating a transmission condition a main wave and a reflected wave corresponding to said main wave signal level and said ghost imaging signal level, respectively of said digital signal on a display.

18. (currently amended)A method of displaying a digital signal transmission condition according to claim 17, further comprising the steps of;

generating a BER signal indicative of the bit error rate of said digital signal received and a field intensity signal indicative of the field intensity of said digital signal received in said second digital signal processing unit; and

simultaneously displaying said BER signal and said field intensity signal in association with said main wave and a reflected wave on said display.

19. (currently amended)A method of displaying a digital signal transmission condition according to claim 17, ~~wherein said digital modulation system is a multi-carrier modulation system,~~ and further comprising the steps of;

generating a guard interval signal corresponding to a period of said guard interval of said digital signal received, ~~and a time scale signal~~ in said digital converter; and

displaying a guard-interval based on said guard interval signal ~~and a time scale based on said time scale signal~~ in association with said waveform main wave and said reflected wave on said display.

20. (currently amended) A method of displaying a digital signal transmission condition according to claim ~~18~~17, ~~wherein said digital modulation system is a multi-carrier modulation system, and~~ further comprising the steps of; generating ~~a guard interval signal and~~ a time scale signal in said signal converter; and

displaying ~~a guard interval based on said guard interval signal and~~ a time scale based on said time scale signal in association with said ~~waveform~~ main wave ~~and said reflected wave~~ on said display.

21. (original) A method of displaying a digital signal transmission condition according to claim 17, further comprising the steps of; detecting an abnormality of said digital signal from said correlation value signal; and outputting a signal indicative of said abnormality.

22. (currently amended) A method of displaying a digital signal transmission condition according to claim 21, further comprising the steps of; storing a signal indicative of said abnormality in a memory unit; and indicating simultaneously the signal indicative of ~~said waveform with said~~ abnormality and ~~a current waveform with no abnormality indicating said transmission conditions~~ said main wave and said reflected wave.

23. (original) A method of displaying a digital signal transmission condition according to claim 19, further comprising the step of changing a period of said guard interval.

24. (currently amended) A method of displaying a digital signal transmission condition according to claim 21, wherein the step of detecting the abnormality of said digital signal is the step of detecting on the basis of relative positions relating to between said waveform, said main wave, said reflected wave and said guard interval.

25. (original) A method of displaying a digital signal transmission condition according to claim 21, further comprising the step of generating an alarm when said abnormality is detected.

26. (original) A method of displaying a digital signal transmission condition according to claim 21, wherein the step of detecting the abnormality of said digital signal comprises the steps of;

dividing a displaying region on said display into a plurality of regions; and
deciding whether said abnormality is presence or absence on the basis of the position of said region which said waveform is indicated.